

XII.—An Account of some Geometrid Moths collected in Sarawak. By L. B. PROUT, F.E.S.

(With one Plate.)

The Geometrids of these collections, with the exception of a few species which are common almost everywhere, are exceedingly interesting and form a very valuable contribution to our knowledge both of the fauna of Sarawak in particular and of the geographical distribution of the family in general. The large number of species relatively to the total of specimens suggests how rich must be the resources of the mountains worked, although it has occasionally been a slight obstacle to the complete working-out of the material, as little can be made of single specimens (especially if ♀ or aberrations or in poor condition) of obscure species. However, it has been found possible to describe adequately a considerable number of novelties, some of them quite striking; thirteen are dealt with in the present instalment and several others are awaiting description.

Of the species not hitherto recorded from the Malayan subregion, some, as would be expected, belong chiefly to India and Burma, but a few find their affinities in New Guinea. Special attention may be called to the very interesting case of *Horisme murudensis* of the Mt. Murud collection.

Unfortunately the dates of capture (and consequently the exact altitude, for which our only clue was in the list of dates), are not quite complete, as the smaller specimens were unfortunately packed two or more in one paper and uncertainties arose as they passed from hand to hand in setting and preliminary sorting out; otherwise the data are very good.

SUBFAM. OENOCHROMINAE.

1. SARCINODES DEBITARIA Wlkr.

Aurima debitaria Wlkr., List Lep. Ins., xxvi, p. 1527, 1862, Darjeeling.

Bakong—1 ♀.

Males of this species are sent quite commonly in collections from North India and Swinhoe (Cat. Lep. Het. Oxf. Mus., ii, p. 320) records it from Sumatra, but there are no females in any collection to which I have access. Dr. Mjöberg's specimen is different in upperside coloration from the male, but I forbear to pronounce upon its status without further material.

2. EUMELEA LUDOVICATA Guen.

Eumelea ludovicata Guen., Spec. Gén. Léop., ix, p. 393, 1858, Ceylon.

Mt. Murud (?)—1 ♀.

This species is distributed, in various races, throughout nearly the entire Indo-Australian region. As at present understood, the name-typical race ranges from India to Formosa and to the Malay Peninsula and Sunda Islands (see Seitz Macrolep., xii, p. 31), but further subdivision may prove possible.

3. DERAMBILA PROPAGES sp. n.

♂ 27 mm.

Head white. Palpus unusually long for the genus, the second and third joints each measuring fully 6 mm.; white, partly suffused on outer side with light-brown, the terminal joint mostly dark. Antennal ciliation rather long (only one antennal stump remaining in the unique type). Thorax and abdomen mostly white; abdomen tufted beneath. Legs mostly white; hind tibia very long, dilated, fringed above; (tarsus?).

Fore wing shaped about as in *zincaria* Guen.; iridescent white; costal margin light grey-brown, more broadly even than in *lumenaria* Hb.-Gey.; cell-dot large, subtriangular black; lines light-brown; antemedian angled outward behind SC, then oblique inward, forming large spots on M--M² and at hind margin; postmedian almost as in *lumenaria* but with the spots larger; subterminal macular, as in *lumenaria*, but almost touching termen; terminal dark line fine and slight. Hind wing with SC² well separate; markings nearly as in *lumenaria* but thicker; subterminal nearly as on fore wing, rather smaller.

Underside iridescent white; fore wing with a black cell-spot and slightly shaded costa; lines almost entirely obsolete.

Mt. Dulit, 3000 feet.

At first sight suggests a heavily marked *lumenaria*, though not even in the same group as regards generic structure.

4. DERAMBILA SAPONARIA Guen.

Zandopteryx saponaria Guen., Spec. Gén. Léop., x, p. 16, 1858, Ceylon.

Lio Matu, December—1 ♂.

Range. India, Malay Peninsula, Borneo, Banka, Philippines.

5. ALEX PALPARIA Walk.

Panazra palparia Walk., List Lep. Ins., xxiii, p. 988, 1861, Hindustan.

Alex niasica Swinh., Ann. Mag. Nat. Hist. (8), xix, p. 416, 1917 (syn. nov.), Nias.

Mt. Murud (?)—1 ♀.

The specimen belongs to the ab. *obsoleta* Warr., Nov. Zool., i, p. 368, = *niasica* Swinh.

Range.—About as in the preceding species.

6. OZOLA BASISPARSATA Walk.

Carima basisparsata Walk., List Lep. Ins., xxvi, p. 631, 1862, Sarawak.

Lio Matu, December—1 ♂.

Range.—Malay Peninsula to Queensland and the Louisiades.

SUBFAM. HEMITHEINAE.

7. NEOALBIS FLAVIBASALIS Warr.

Actenochroma flavibasalis Warr., Nov. Zool., i, p. 381, 1894, Java.

Bakong—1 ♂.

This species seems to be localised in the Malay Peninsula, Java, Sumatra, and Borneo and never taken in large numbers. The Mjöberg specimen is a rather grey aberration.

8. PINGASA CHLORA *crenaria* Guen.

Hypochroma crenaria Guen., Spec. Gén. Ins., ix, p. 278, 1858, Central India.

Pah Trap, November—1 ♂.

Pingasa chlora Cram. is very generally distributed in the Indo-Australian region; the race *crenaria* (not very sharply differentiated but generally separable by the less acutely angled antemedian line) in India, the Malay Peninsula and adjacent islands, S. China, and Formosa.

9. *TERPNA VIGENS ruficoloraria* Warr.

Terpna ruficoloraria Warr., Nov. Zool., iv, p. 32, 1897, Borneo.

Mt. Murud, 6000--6500 feet, November—1 ♂.

T. ruficoloraria is only known to me from Penang, Borneo, and Sumatra, but I have tolerable confidence in referring to it as a redder race than the Indian *vigens* Butl.

10. *DYSPHANIA TRANSDUCTA* Walk.

Euschema transducta Walk., Journ. Linn. Soc. Zool., vi, p. 94, 1861, Borneo.

Hazis doubledayi Snell., Tidj. Ent., xxvii, pp. lxxxiii and 97, 1884, Malay Peninsula.

Pah Trap, November—1 ♂.

11. *ORNITHOSPILA SUBMONSTRANS submonstrans* Walk.

Geometra submonstrans Walk., List Lep. Ins., xxii, p. 526, 1861, Sarawak.

Mt. Murud, 6000--6500 feet. October--November—2 ♂, 3 ♀.

Range. Malay Peninsula, Sumatra, Borneo, Celebes; the race *moluccensis* Prout (Nov. Zool., xxiii, p. 202), on Batjan and Obi.

12. *ORNITHOSPILA BIPUNCTATA* Prout.

Ornithospila bipunctata Prout, Nov. Zool., xxiii, p. 201, 1916, Natuna Is.

2 ♂. the exact data lost (believed Mt. Murud, certainly belonging to that expedition).

Range.—Malay Peninsula, Borneo, Natuna Islands, Celebes.

13. *OSTEOSEMA DISCATA* Warr.

Chlorostrota discata Warr., Nov. Zool., iv, p. 389, 1897, N. Borneo.

Mt. Murud, November—1 ♂; Mein Plateau, November—1 ♂.

Apart from Warren's type, I have hitherto only seen this interesting species from the Philippines. Coll. Wileman.

14. *ULIOCNEMIS BIPLAGIATA* Moore.

Comibaena biplagiata Moore, Lep. Ceyl., iii, p. 435, 1887, Ceylon.

Mt. Murud, November—1 ♂.

On account of the morphological difference I was certainly wrong (Gen. Ins. Geom. Hemith., p. 91), in regarding this species as conspecific with the one that formerly passed as *cassidara* Guen., recte *castalaria* Oberth. (Et. Lép., xii, p. 106, pl. 388, f. 3268). Superficial distinctions are very slight.

but *biplagiata* has the postmedian of hind wing slender and slightly *incurved* between R^3 and M^2 , while in *castalaria* it is here thicker and perfectly straight. Moreover, the apical patch of the hind wing in the ♂ of *biplagiata* is predominantly rufous or apricot orange, whereas in *castalaria* it is darker and duller, more mixed with violet and black. The known range of *biplagiata* is Ceylon, Java, Sumatra, Borneo, the Natuna Islands, and Celebes; eastward it is represented by *subornataria* Rothsch. = *ceramicaria* Oberth. (Ceram) and *elegans* Warr. (New Guinea, Louisiades, etc.).

15. THALASSODES QUADRARIA Guen.

Thalassodes quadraria Guen., Spec. Gén. Lép., ix, p. 360, 1858. ♀
Central India.

Pah Trap, November—1 ♂.

Range.—India, Formosa, Penang, Sumatra, Borneo, Celebes.

16. THALASSODES IMMISSARIA Walk.

Thalassodes immissaria Walk., List Lep. Ins., xxii, p. 553, 1861.
Ceylon.

Lio Matu, December—1 ♂.

In Lep. Cat., 14, p. 96, I cited this name with a query to *depulsata* Walk., but unfortunately it really supplants *opalina* Butl., which, however, may be a North Indian race. India, Burma, Hainan, Formosa. Other forms, differing very little from typical *immissaria*, reach away to New Guinea and Queensland and are known as *rhytipporus* Lower.

17. THALASSODES CURIOSA Swinh.

Thalassodes curiosa Swinh., Trans. Ent. Soc. Lond., 1902, p. 673.
Penang.

Mt. Murud, 6500 feet, November—2 ♂; Mt. Poi, 5200 feet—1 ♂.

Known to me also from the Khasia and Jaintia Hills, Assam.

18. IODIS sp.

Mt. Penrissen, 4400 feet—1 ♀.

Extremely discoloured. Appears to have been of a dark grey-green, somewhat as in *inumbata* Warr., the palpus with terminal joint very long, fore wing with SC^1 arising close to apex of cell, costal edge dotted, postmedian line strongly and irregularly dentate, much as in *sinuosaria* Leech but less extreme at fold.

19. CHLOËRES DYAKARIA Walk.

Eucrostis dyakaria Walk., List Lep. Ins., xxii, p. 567, 1861, ♂ Sarawak.
Cosmostola dyakaria Swinh., Cat. Lep. Het. Oxf. Mus., ii, p. 396,
 pl. vi, f. 9, 1900, ♂.

Chloëres dyakaria Prout, Gen. Ins., pp. 129, 240, 1912, ♂.

Mt. Poi, 4350 feet—1 ♀ (neallotype).

Similar to the ♂ as described by Walker and figured by Swinhoe; palpus long and slender, with the terminal joint rather strongly elongate, as in *Comostolopsis*, to which genus—in spite of the non-stalking of M^1 of the fore wing and very short stalking of the same vein on the hind wing—it ought probably to be transferred. Really transitional. Apparently an extremely rare species.

SUBFAM. STERRHINAE.

20. PTOCHOPHYLE OZOPHANES Prout.

Ptochophyle ozophanes Prout, Ann. Mag. Nat. Hist. (9), i, p. 22, 1918, Perak.

Mt. Dulit, 3000 feet—1 ♂.

Described from a single male in Coll. Joicey. I have since seen only one other example, from Pahang, in Coll. Fed. Malay States Museum.

21. ANISODES SUBROSEA Warr.

Perixera subrosea Warr., Nov. Zool., xiii, p. 91, 1906, British New Guinea.

Mt. Murud, ? 6500 feet, November—1 ♂.

Seems indistinguishable from the most black-marked New Guinea examples, though more material might be expected to reveal some racial difference. Hitherto only known from Dutch and British New Guinea. Several of the species in this genus have a remarkably wide distribution.

22. ANISODES ABSCONDIRARIA Walk.

Anisodes absconditaria Walk., List Lep. Ins., xxvi, p. 1580, 1862, South Hindustan.

Mt. Murud, 6000--6500 feet, November—1 ♀.

Distributed in India, Malay Peninsula, Formosa, and the Greater Sunda Islands.

23. ANISODES DECRETARIA Walk.

Anisodes decretaria Walk., List Lep. Ins., xxii, p. 650, 1861, Sarawak.

Mt. Murud, November—3 ♀.

The most typical forms are perhaps confined to Borneo and Singapore, but I doubt whether *pallida* Moore (Lep. Ceyl. iii, p. 445, pl. 201, f. 11, Ceylon, N. India, Malay Peninsula, Formosa), is definitely separable even racially.

24. ANISODES SEMICOMPLETA Walk.

Anisodes semicompleta Walk., List Lep. Ins., xxii, p. 651, 1861, Sarawak.

Anisodes immemoraria Walk., List Lep. Ins., xxv, p. 1618, 1866, Java.

Anisodes strictaria Snell., Tijd. v. Ent., xxiv, p. 81, pl. viii, f. 7, 1881, Celebes.

Emmesura semicompleta Warr., Nov. Zool., v, p. 20, 1898.

Lio Matu, December—1 ♂.

Perhaps commonest in Borneo, but reaches Java, Assam, Hainan, the Philippines and Celebes and may be expected from Sumatra. May have to sink to *illegidaria* Guen. (Spec. Gén. Léop., ix, p. 421, Sarawak), but it is very hard to reconcile.

25. ANISODES PYRRHOCRICA sp. n.

♂ 31 mm.

Face dull purple-red in upper half, whitish-buff in lower. Palpus moderate, terminal joint moderately long (nearly half second); crimson above, pale beneath. Vertex, thorax and abdomen whitish-buff, abdomen somewhat mixed with roseate scaling above. Antennal shaft mostly reddened except at base and tip. Fore leg reddened on upper and inner sides; hind leg simple, the tibia with two unequal spurs, the tarsus long.

Fore wing without areole; termen almost smooth; fore wing buffish-white-grey, with crimson irroration, giving it a fleshy tinge; a black cell-dot; antemedian marked by five blackish dots, irregularly placed, the three on veins (SC, M, and SM²) forming a very slight curve, oblique inwards posteriorly, the two on folds more distally, especially that in cell; median about midway between cell-dot and postmedian, grey not very concise, sharply dentate outward on veins, incurved between the radials and between M⁴ and SM²; postmedial about 2 mm. from termen, receding anteriorly, marked chiefly by vein-dots, that on R² elongate and more

proximal; subterminal indicated by vague grey shades, the proximal one interrupted, especially about cellule 3; termen with sharp black interneural dots. *Hind wing* with termen feebly subcrenulate; a bright orange discal ocellus of about 1 mm. diameter, with a small pale yellow pupil; lines and terminal dots of fore wing continued, the median and postmedian lines rather more proximal.

Fore wing beneath almost entirely covered with rosy suffusion, leaving a narrow mottled terminal area and a clear hind area (behind submedian fold); cell-dot and terminal dots present. Hind wing beneath almost all pale; some rosy suffusion at costa (especially apically); postmedian dots and some ill-defined subterminal spots rosy.

Mt. Murud, November.

A rather smaller, paler, worn ♂ from the Poeh Mts. is in Coll. Tring Museum.

26. ANISODES MONETARIA Guen.

Anisodes monetaria Guen., Spec. Gén. Lép., ix, p. 418, 1858, Borneo.

Anisodes areolaria Guen., Spec. Gén. Lép., ix, p. 418, 1858 (ab.), Borneo.

Anisodes argentispila Warr., Proc. Zool. Soc. Lond., 1893, p. 361 (ab.), Naga Hills.

Anisodes hyperythra Swinh., Ann. Mag. Nat. Hist. (6), xiv, p. 135, 1894 (ab.), Khasia Hills.

Mt. Murud, 6500 feet, November—1 ♂.

There can be no doubt that the names cited above refer to forms of a single variable species. The Mt. Murud example belongs to ab. *hyperythra* Swinh.

Range. Ceylon, N. India, Malay Peninsula, Borneo.

27. NOBILIA TURBATA Walk.

Nobilia turbata Walk., List Lep. Ins., xxiv, p. 1098, 1862, Sarawak.

Plutodes strigularia Snell. in Veth, Midden-Sumatra, iv, 1 (2), p. 57, 1880, Sumatra.

Lio Matu, December—1 ♂; Mt. Poi, 4300 feet, October—1 ♂.

Lord Rothschild has pointed out (Proc. Zool. Soc. Lond., 1922, pp. cxxxii--cxxxiii), that the supposed races of this species have become so differentiated in the ♂ genitalia "that interbreeding would be difficult," i.e., that they would have virtually attained the rank of species. True *turbata* is thus confined to the Malay Peninsula, Sumatra, Java, and Borneo.

28. *NOBILIA OBLITERATA* Warr.

Nobilis obliterata Warr., Nov. Zool., iv, p. 220, 1897, Borneo.

Foot of Mt. Dulit—1 ♂.

Only known from Borneo and even there far less frequent than the preceding species.

29. *PROBLEPSIS ALBIDIOR* Warr.

Problepsis albidior Warr., Nov. Zool., vi, p. 33, 1899, N.W. India.

Mt. Murud, November (?)—1 ♂. Rather wasted.

This species was hitherto known to me from N. India, S. Japan, the Liu-Kiu Islands, and Formosa, and a close relative (probable race) in New Guinea (*magna* Warr., 1906). The present record helps to bridge over one of the wide gaps in distribution, but it is not unlikely that—as with *Nobilis turbata* and others—close anatomical work may reveal the existence of an assemblage of representative species.

30. *SCOPULA VACUATA* Guen.

Acidalia vacuata Guen., Spec. Gén. Lép., ix, p. 504, 1858, Sarawak.

Lio Matu, rather small, worn—1 ♂.

Only known from Borneo.

31. *SCOPULA RUFISTIGMA* Warr.

Craspedia rufistigma Warr., Nov. Zool., ii, p. 93, 1895, Khasia Hills.

Mt. Murud, 7200 feet, November (?)—1 ♂.

Apart from Assam examples, I have only seen this insect from Kinabalu.

32. *SCOPULA OEDOCNEMIS* sp. n.

♂ 26 mm.

Face black. Palpus black, beneath pale ochre-brownish. Vertex white. Occiput black. Antennal shaft blackish, at extreme base white; ciliation fine and long (in proximal part nearly 3). Thorax and abdomen whitish-grey. Fore leg somewhat dark-mixed. Mid tibia with inner spur long, the outer considerably less than $\frac{1}{2}$ as long. Hind tibia long, greatly swollen, hair pencil whitish and pale buff; tarsus less than $\frac{1}{2}$.

Fore wing white-grey with brown-grey irroration (tone as in *bifalsaria* Prout or dusky *incanata* Linn.); cell-mark somewhat elongate, not strong; lines weak; antemedian slightly excurved in cell (here 3.5 mm. from base) then oblique inward; postmedian fine, about 2 mm. from termen, weakly sinuous; median shade well beyond cell-mark, somewhat undulating; pale subterminal rather broad and conspicuous, at least as broad as in *incanata*, the curves rather stronger; terminal line black, not or scarcely interrupted, though a little thickened between the veins; fringe weakly irrorated. *Hind wing* with termen scarcely appreciably bent in middle; cell-mark still weaker, less concise; antemedian line wanting, the rest as on fore wing, the median and postmedian slightly farther from termen.

Fore wing beneath a little more smoky. *hind wing* a little paler; both weakly marked, the postmedian line the most noticeable; terminal line brownish.

Lio Matu, December.

Probably nearest to *spissitarsata* Warr., but with termen of fore wing slightly more oblique, the lines somewhat different, cell-dots weaker, the hind tibial pencil not black-grey, the tarsus not so extremely short (in *spissitarsata* about $\frac{1}{6}$). Venation normal (in *spissitarsata* SC¹ of fore wing is stalked well beyond the end of the areole).

33. SCOPULA LEUCOPIS sp. n.

♂. ♀ 30--31 mm.

Face predominantly white, only darkened round the edges. Palpus black, pale beneath. Vertex, thorax and abdomen concolorous with wings; collar more ochreous-brown. Antennal joints of male somewhat projecting; ciliation over 1. Hind tibia of male thickened, elongate (nearly twice femur); tarsus considerably under $\frac{1}{2}$ tibia, second joint nearly $\frac{2}{3}$ length of first.

Fore wing whitish-brown, with sparse blackish irroration; cell-dot black; lines brown, not very strong; antemedian out-bent in cell and again just behind M (angled inward on M), oblique to hind margin; median moderately dentate, at the radials midway between antemedian and postmedian, anteriorly oblique inward, posteriorly oblique inward, somewhat incurved at fold; postmedian rather more concise (lunulate-dentate), the teeth accentuated by small black vein-dots, general course nearly as of median but rather less oblique posteriorly, an

inward curve between the radials more noticeable; subterminal feebly defined by weak, slightly macular shades; terminal dots strong, black, interneural, feebly connected by slight grey shading; fringe with minute dots at vein-ends. *Hind wing* with termen not noticeably bent; cell-dot rather large; antemedian line wanting; median line incurved proximally to it, angled outward on SC, M, and SM²; rest as on fore wing, postmedian rather farther from termen, subterminal shades and fringe-dots slightly stronger.

Underside rather paler, the fore wing with a little suffusion proximally, the basal part of the costa rather strongly infuscated; markings of upperside mostly indicated, but only the cell-dots, terminal dots and on the fore wing the postmedian line well-developed.

Mt. Murud, 6000--6500 feet, October, type ♂, November, paratype ♂, ♀, allotype ♀.

34. STERRHA ACTIOSARIA Walk.

Acidalia actiosaria Walk., List Lep. Ins., xxii, p. 750, 1861, Ceylon.

? *Nemoria* ? *damnata* Walk., List Lep. Ins., xxii, p. 756, 1861, Sarawak.

Acidalia indotaria Walk., List Lep. Ins., xxiii, p. 763, 1861, Sarawak.

Mt. Murud, 6000--6500 feet, November—5 ♀; Mt. Poi, 4500--5200 feet—3 ♀, 2 ♂; Mt. Penrissen, 2000--4400 feet—2 ♂, 1 ♀.

A very widely distributed Indo-Malayan species, or possibly assemblage of close allies which have not yet been satisfactorily worked out. In any case Swinhoe (Cat. Lep. Het. Oxf. Mus., ii, p. 362), is in error in referring *damnata* and *indotaria* (which seem to be synonymous) to *Craspedia* (*Scopula*). I suspect *squamipunctata* Warr. (1900), is an ab. of *actiosaria*.

SUBFAM. LARENTIINAE.

35. ACOLUTHA PICTARIA Moore.

Emmelesia pictaria Moore, Lep. Coll. Atk., p. 267, 1888, Darjeeling.

Mt. Murud, 6000--6500 feet, November—1 ♂.

The Malayan form may prove racially different. A small form from Hainan has already been named *imbecilla* Warr., 1905, the New Guinea race *canicosta* Warr., 1906.

36. *ACOLUTHA FLAVIPICTARIA poiensis* subsp. n.

More deeply coloured than *f. flavipictaria* Prout (Nov. Zool., xxix, p. 359, Khasia Hills; also from Ceylon in Coll. Joicey), the dark markings of the median area on both wings broadened and strengthened. Underside with blurred dusky suffusions in distal area.

Mt. Poi, 4500 feet, type and another ♂, 4400 feet—1 ♂.

37. *EOIS MIXOSEMIA* sp. n.

♂. ♀ 21--26 mm.

Group of *memorata* Walk. (List Lep. Ins., xxii, p. 657), partaking of some characters given for each of the three species which are differentiated (Nov. Zool., xxix, pp. 347--8).

Size of *memorata* Walk. Structure of *amydroscia* Prout (minute antennal ciliation and full development of areole). Coloration and markings almost exactly as in *phaneroscia* Prout, fore wing beneath less suffused. Dorsal yellow spots of abdomen not sharply defined, the rosy markings which, in the allies, generally enclose them being less evenly developed, feebly expressed excepting a strong pair of subdorsal spots near the hinder end of each segment. An aberration (2 ♂, 2 ♀) has the postmedian developed into a blackish blotch at abdominal margin of hind wing.

Mt. Murud, 6000--6500 feet, October—5 ♂, 6 ♀.

38. *POMASIA VERNACULARIA* Guen.

Pomasia vernacularia Guen., Spec. Gén. Léop., ix, p. 427, 1858, Sarawak.
Pomasia gelastis Meyr., Tr. Ent. Soc. Lond., 1897, p. 70, Pulo Laut.

Mt. Dulit, 3000 feet, January, typical—1 ♂; Mt. Murud, 6500 feet, November—1 ♂, 1 ♀, rather bright, the ♀ larger; Mt. Murud (?) November—1 ♂, also bright, still larger.

Apart from the localities cited in the above synonymy, I know this species only from the Malay Peninsula. It may be noted that Meyrick (loc. cit.) misidentified *conferta* Swinh. (1902), as *vernacularia* and consequently named the wrong species.

39. *COLLIX EXAMPLATA* Warr.

Collir exemplata Warr., Nov. Zool., xiii, p. 98, 1906, Angabunga River, British New Guinea.

Mt. Poi, 4850 feet—1 ♀; Mt. Penrissen, 4400 feet—1 ♀.

I cannot at present separate the examples here recorded from Warren's species, which inhabits the Moluccas and New Guinea. Perhaps the ♂ will throw further light on it.

40. *COLLIX BLOSYRA* sp. n.

♂ 43 mm.

Head and body concolorous with wings. Palpus not quite 2; Sudan-brown or slightly yellow, with a blackish patch beneath base of second joint and blackish terminal joint. Wing-tergulae tipped with brown. Abdomen with some sienna latero-dorsal marks, only an elongate anterior one at all conspicuous.

Fore wing with R^1 not stalked; rather more uniformly dark than the rest of the species, in some lights with a strong purple gloss; the raised black cell-spot rather large, roundish; the transverse dark lines mostly weak, lunulate-dentate, somewhat thickened and blackened anteriorly; postmedian further defined, apart from its spot at just beyond five-eighths costa, by rather more distally placed, somewhat elongate, blackish spots in cellules 7 and 3, the latter the larger; subterminal lines fine, not very conspicuous dentate anteriorly, less so posteriorly, proximally with some irregular dark filling-in, distally with some smaller, but more regular, interneural streaks running to termen; terminal black line slightly interrupted; fringe with a fine pale line at base and a darker central one. Hind wing concolorous; cell-dot minute, followed by some pale scales; no black spots; lines weak, the postmedian least so; subterminal somewhat interrupted, but forming two conspicuous pale dots in cellules 2 and 1.

Underside rather less dark, more brownish, nearly unicolorous; cell-spot of fore wing smaller; both wings with postmedian line and cloudy praesubterminal band discernible; a fine pale line at base of fringe.

Mt. Murud, 6000-6500 feet, November.

41. *HORISME MURUDENSIS* sp. n.

♂ 27 mm.

Face whitish-grey, with a blackish spot at each corner. Palpus about 2, second joint with rough projecting scales above and rather longer, more hair-like, projecting scaling beneath, third joint moderate; blackish, at base and tip white and with some white scales above. Antennae slightly thickened, ciliation vestigial. Vertex and thorax brown-black, mixed with white, the double metathoracic crest mostly whitish. Abdomen rather elongate; above predominantly brown-black, beneath mottled with grey. Legs blackish, with slender white-grey marks at ends of joints.

Fore wing moderately elongate, apex blunt, termen smooth, gently curved, anteriorly not very oblique; grey (irrorated brown-black and white), the darker colour predominating in the basal area (except at hind margin) and in the broad median band, the white in the narrow, curved band between; median band 6 mm. wide at costa, 4 mm. posteriorly, its proximal edge slightly crenulate, its distal very slightly concave between costa and the slight projection behind R^3 , angled inward at M^1 and M^2 , outward between, then slightly crenulate to hind margin, slightly indented at SM^2 ; cell-dot small, discernible on an ill-defined pale costal space in middle of median band; whitish band outside median area very narrow; a brown line beyond it between the radials; subterminal line very fine and indistinct, shallowly lunulate-dentate, cut by an oblique apical whitish dash and accompanied distally by blackish interneural dots; terminal line broken into pairs of dots; fringe mottled, darker proximally than distally. Hind wing rather elongate costally, termen rounded, weakly crenulate; grey; termen and fringe nearly as on fore wing; a very faint postmedian indicated, bluntly angled behind R^3 .

Both wings beneath as hind wing above.

Mt. Murud, 6000-6500 feet, November.

Very interesting from its obvious affinity to a hitherto exclusively Papuan and Moluccan section of the genus; similar to *brunneata* Warr. (1906), and *genuflexa* Prout (1923).

42. EUPITHECIA ALBIFURVA Hmpsn.

Eupithecia albifurva Hmpsn., Journ. Bombay Nat. Hist. Soc., xviii, p. 49, pl. E, f. 8, 1907, Ceylon.

Mt. Murud, November (?)—1 ♀.

New for the Malayan subregion.

43. EUPITHECIA EUPITHECIATA Walk.

Phibalapteryx eupitheciata Walk., List Lep. Ins., xxvi, p. 1720, 1862, Australia.

Mt. Murud, 6000-6500 feet, October—1 ♀.

One of the few extremely widely distributed species of the genus, already known from Ceylon, India, Formosa, Malay Peninsula, Java, Borneo, Sangir, Celebes, British and Dutch New Guinea, and Australia.

44. EUPITHECIA DINOSIA sp. n.

♀ 27 mm.

Head ochreous-brown, mixed with red; frontal cone rather broad. Palpus very long (about 3), second joint rather heavily scaled, third joint elongate, smooth; light ochreous-brown with a tinge of olive. Collar coloured as palpus. Tegulae (in sens. Hmpsn.) spotted with red; true (wing-) tegulae variegated, the hair at end blackish. Abdomen mixed with red dorsally, with large orange-red crests on segments 3 and 4; body beneath pale. Legs partly black-mixed; spurs long.

Fore wing glossy; areole ample; proximal one-third dark purplish, traversed and bordered by fine blackish lines and irrorated here and there with red scales; its distal edge little waved, but with a single sharp tooth just behind SC, which is almost cut off from the dark area by a few white scales; median area light brown, suffused (under the lens weakly and irregularly mottled) with red and throughout (excepting a fine pale proximal line) very finely irrorated with brown-grey; no cell-dot; postmedian line black, becoming very fine and weak posteriorly, arising at about $3/5$ costa, slightly indented at SC⁵. R² and M² with blunt lobes between the indentations; distal area paler, more olive-greyish as far as the subterminal, then predominantly red; a blackish costal patch midway between postmedian and subterminal, continued across the wing as a boundary-line to the pale double "rivulet" band of the *Larentiinae*, though becoming very faint about the medians, and merged in a brown mark between M² and hind margin; subterminal indistinct, crenulate; terminal line interrupted at the veins; fringe proximally chequered, red and blackish, centrally with a fine pale line, distally smoky. Hind wing grey, slightly paler at base, darkened at tornal end of abdominal margin; fringe proximally tinged with brown, weakly dark-spotted, distally pale greyish.

Both wings beneath glossy drab-grey, the fore wing slightly suffused with fuscous and with the principal markings very faintly indicated, the hind wing with a few shadowy brownish lines.

Mt. Murud, 6000-6500 feet, November.

Superficially recalls the African *E. nigribasis* Warr. The *Sauris*-like palpi are curious and I suspect the ♂ will present some high specialisations,

45. *EUPITHECIA DELOZONA* sp. n.

♀ 18 mm.

Palpus nearly 2, first and second joints with projecting scaling beneath, second joint with erect scales above, a small projecting tuft over the moderate third joint. Head and body pale green, discolouring to yellowish. Fore tibia and tarsus infuscated above, with pale spots at ends of joints.

Fore wing with areole ample; DC^2 slightly longer than DC^3 ; pale green, with slightly darker bands between subbasal and antemedian lines and just beyond the postmedian; basal area purple costally; lines fine, black, finely edged with white (the subbasal and postmedian outwardly, the antemedian inwardly); subbasal slightly curved anteriorly then almost straight; antemedial slightly oblique inward to M, curving to become slightly oblique outward; postmedian slightly incurved between costa and R^1 and between M^2 and SM^2 ; the entire median area deep dull purple, traversed by faint reddish and dark lines; fringe concolorous. Hind wing grey to beyond middle, then pale green.

Both wings beneath nearly as fore wing above, the grey on hind wing less pronounced.

Mt. Murud, 6000-6500 feet, November.

Near *biviridata* Warr. (Nov. Zool., iii, p. 125, Khasia Hills), termen of fore wing rather less oblique, hind wing ampler, green borders broader, that of hind wing brighter, lines rather different in shape—postmedian less protuberant, etc.

46. *RHINOPRORA EURYMESA* sp. n.

19--21 mm.

Face very pale green. Palpus almost $2\frac{1}{2}$; coarsely sprinkled with black except at tip. Vertex whitish. Antenna dark-dotted above. Thorax above pale green. Abdomen slightly elongate; pale, with a slight dark belt on second tergite and with the anal segments suffused with dark-grey. Fore leg blackish, with pale spots at end of tarsal joints; mid tibia and tarsus blackish above, with pale spots at ends of joints and at centre of tibia.

Fore wing pale bluish-green; markings reddish mixed with black; basal patch small, its blackish boundary line nearly vertical; no subbasal band; median area considerably broader than in *palpata* Walk., at costal margin about 4 mm., at hind margin about 3 mm., its proximal line somewhat bent near costa, then straightish, its distal (the postmedian) more

weakly outbent at R^1 and R^3 than in *palpata*, otherwise similar, obsolescent posteriorly, its reddish colouring only developed in anterior part, and even here interrupted by a band of the ground-colour at end in front of the discocellulars; suggestions of a fine white line edging the postmedian distally; subterminal very fine, accompanied proximally by blackish marks in the usual positions, the costal fairly large, a little displaced proximally, the radial pair smaller than in normal *palpata*, the posterior ones slight; area between subterminal and termen suffused with red; terminal line black with minute green dots at veins; fringe in proximal half reddish, with a pale basal line and dark spots opposite the veins, in distal half pale greenish, with the dark spots fainter than in proximal. Hind wing distally whitish with very faint indications of postmedian line and with an ill-defined grey subterminal band; terminal line weak; fringe weakly spotted.

Fore wing beneath glossy brown-grey, paler than in *palpata*, somewhat similarly marked but without cell-dot. Hind wing nearly as above.

There is an unnamed ♂ in Tring Mus. from Mt. Kinabalu and I have recently seen a ♀ from Pahang "Cameron Highlands," 4800 feet, 13th June, 1923 (H. M. Pendlebury), in Coll. Fed. Malay States Mus. A worn ♀ in Coll. Tring Mus., from Arjuno, Java, may perhaps be added.

♀ 17--20 mm.

On an average smaller than the ♂. Fore wing brighter green, more sharply marked. Hind wing greyer than in the ♂, more strongly marked, with one or two additional lines proximally, most manifest beneath.

Mt. Murud, 6000--6500 feet, November, Type; 1 ♂ and 2 ♀ from the same locality. Mt. Poi, 5200 feet—3 ♂, 5 ♀.

47. RHINOPRORA CHLOROCAMPSIS sp. n.

♀ 20 mm.

Closely similar to *rubrifusa* Warr. (Nov. Zool., ii, p. 109, as *Gymnodisca*), perhaps a form of the same. Sufficiently distinct in the form and position of the median band. Fore wing with the red-brown subbasal patch larger; median band more distal than in *rubrifusa*, occupying at costa the central one-third of the wing, its distal-side strongly convex (in *rubrifusa* scarcely so), subterminal dark costal spot much weaker, more distal, subterminal line almost obsolete; terminal area with less green admixture (hardly any at apex).

Hind wing above, and both wings beneath, similar with the postmedian line a little more distal and more excurved.

Mt. Murud, 6000--6500 feet, November.

48. RHINOPRORA XANTHOCOMES Prout.

Rhinoprora xanthocomes Prout, Journ. Bomb. Nat. Hist. Soc. (ined.), Burma.

Lio Matu, December—1 ♂.

49. RHINOPRORA PALPATA Walk.

Cidaria palpata Walk., List Lep. Ins., xxv, p. 1404, 1862, South Hindustan.

Mt. Murud, 6000--6500 feet, November—2 ♂.

Both are rather small and weakly marked—perhaps a race, but not in very good condition.

Range not exactly ascertained, certainly very wide in the Indo-Australian region.

50. RHINOPRORA REGULARIS Warr.

Rhinoprora regularis Warr., Nov. Zool., ii, p. 111, 1895, Perak.

Mein Plateau, November—1 ♂.

Only hitherto known from the Malay Peninsula.

51. CALLUGA COSTALIS Moore.

Calluga costalis Moore, Lep. Ceyl., iii, p. 480, pl. 206, fig. 1, 1887, Ceylon.

Mt. Murud, November—24 ♀.

It is curious that amongst such a long series no ♂ was taken. In Indian collections, too, I have noticed the comparative rarity of that sex, which is well figured by Hampson in the "Fauna of British India," Moths (Vol. III, p. 397, fig. 185). The ♀ has only three spurs on the hind tibia; thus neither sex conforms to *Chloroclystis*, in which Hampson has merged it.

52. CHLOROCLYSTIS MODESTA Warr.

Calluga modesta Warr., Proc. Zool. Soc. Lond., 1893, p. 383, Darjeeling.

Mt. Murud, October--November—4 ♀.

The ♀ of this species is not well known and my reference to the present specimens here is somewhat doubtful.

53. *CHLOROCLYSTIS SEMIScripta* Warr.

Chloroclystis semiscripta Warr., Nov. Zool., xiii, p. 115, 1906, Angabunga River, British New Guinea.

Mt. Poi, 5200 feet—1 ♂.

Only yet recorded from New Guinea, but I have seen a few Malayan specimens in different collections. Nearly related to the following.

54. *CHLOROCLYSTIS RUBROVIRIDIS* Warr.

Gymnopera rubroviridis Warr., Nov. Zool., iii, p. 107, 1896, Khasia Hills.

Mt. Murud, 6000--6500 feet, November—2 ♀, and one without exact date.

55. *CHLOROCLYSTIS OBTURGESCENS* sp. n.

♂ 25 mm.

Face and palpus greenish-grey; palpus over $1\frac{1}{2}$. Body pale greenish-grey, somewhat mixed with dirty whitish.

Fore wing broad, costa strongly arched, termen gently curved, moderately oblique; white, shaded in parts of costal and median areas with dirty olive-greenish and rippled with zigzag olive-greenish lines; an indefinite grey shade indicating the position of the darkest androconial patch of underside: subbasal line from costa at nearly 3 mm. moderately curved; antemedial line moderately curved and slightly crenulate, mixed with black; some pinkish and a few black scales in median area; postmedian line anteriorly thick and mixed with black, projecting an acute tooth outward at R^1 , then very indistinct, crenulate, indented at fold; the white band beyond with a fine bisecting line at one-third of its width; rather large olive-greenish admarginal spots on veins; terminal line fine, olive-green interrupted at veins. Hind wing rather small, amygdaliform, without fringe and almost covered with androconial scaling; dirty olive-brownish, in proximal half mixed with dark grey.

Fore wing beneath partly clothed with androconial scaling, the strongest being a large, dark olive-grey patch behind the cell and the proximal end of M^2 ; the rest of the wing paler olive-brownish. Hind wing beneath pale olive-grey or olive-brownish.

♀ 22--25 mm.

Very similar to that of *rubroviridis* Warr. but less bright, subbasal line of fore wing more curved, median area shaped as in the ♂, with more black proximally than in *rubroviridis*, the hind wing rather paler than in that species, with the markings perhaps rather more proximal.

Mt. Murud, 6000--6500 feet, October, type ♂; November—3 ♀.

Appears intermediate towards "*Chloroplintha*" *velutina* Warr.

56. *ZIRIDAVA XYLINARIA* Walk.

Ziridava xylinaria Walk., List Lep. Ins., xxvi, p. 1550, 1862, Sarawak.

Mt. Murud, November—1 ♂.

Widely distributed from Ceylon and India to New Guinea and Queensland and not very variable.

57. *GONIOPTEROLOBA BICONJUNCTA* sp. n.

♂ 18 mm.

Closely akin to *conjuncta* Warr., Nov. Zool., iv, p. 230, pl. v, fig. 2, Mindoro. Rather smaller and paler. Antennal pectination apparently rather less long. Abdomen with large black dorsal spots.

Fore wing with rather more black marking, in particular with the two bars which form the median band conjoined not only at fold but again at hind margin. Hind wing with the terminal excision between the radials appreciably deeper.

Mt. Murud, 6500 feet, November.

58. *GYMNOSCELIS FASCIATA* Hmps.

Eupithecia fasciata Hmps. Ill. Het., viii, p. 118, pl. clii, f. 22, 1891, Nilgiris.

Mt. Poi, 5200 feet—1 ♂, 1 ♀.

Unless there are two close allies with similar ♂ leg-structure (fore-tibia with a large triangular hairy swelling) the post-median line in this species must be usually variable in degree of angulation. Known to me from the Khasias and the Malay Peninsula.

59. *TRIPTERIDIA SUBCOMOSA* Warr.

Tripteridae subcomosa Warr., Nov. Zool., xiv, p. 161, 1907, Brit. New Guinea.

Mt. Poi, 5200 feet—1 ♂.

Rather darker than the New Guinea form (probably racial).

60. BRABIRA EMERITA sp. n.

♂ 28--34 mm.

Head and body concolorous with wings; collar slightly brighter; abdomen with irregular, interrupted black longitudinal markings subdorsally and laterally, stronger anteriorly than posteriorly. Fore leg partly blackened, with pale rings at middle and end of tibia and ends of tarsal joints. Palpus almost 2. Antennal pectinations very slender and twisted.

Fore wing rather broad, costa slightly arched, termen long, very oblique, slightly curved; light brown, nearly as in *atkinsonii* Moore, or slightly less ochreous; four black-grey spots on costa, the first two rather near together, with ill-defined grey lines or shades (subbasal and intermediate) arising from them, the third and fourth strong, at (just inside) the boundaries of the median area; antemedian and postmedian lines grey, irregularly dentate, the antemedian oblique but less so than termen, the postmedian strongly oblique outward from costal spot to cellule 6, nearly parallel with antemedian to cellule 3, then parallel with termen; a slight reddish-grey suffusion in median area; cell-dot rather large, slightly elongate; a vague median line outbent beyond it; area beyond postmedian palest on the veins, traversed by a faint dentate line; subterminal much as in *atkinsonii*, placed on an ill-defined dark terminal shade; terminal line blackish, interrupted at the veins and somewhat midway between; fringe almost unmarked. Hind wing much paler, with a cloudy band of light-brown just proximal to middle and two broad dentate lines (or narrow bands) beyond, the latter close to termen at both ends.

Fore wing beneath with cell-spot; postmedian line and one corresponding to second of upperside strong, the other markings weak; hind wing less pale than above, the bands weak.

Mt. Murud, 6500 feet, November (type), (paratype, smaller and rather darker than type).

♀ 34 mm.

Fore wing much paler and weaker-marked than in the ♂, but otherwise similar, though the subterminal line looks rather more deeply dentate.

Mt. Poi, 4300 feet, allotype.

61. *PTHONOLOBA LEPTOMITA* sp. n.

♀ 40 mm.

Palpus with second joint longer than diameter of eye, the scales projecting somewhat less than in the type species and *benquetana* Schultze (Philipp. Journ. Sci., v, p. 165, t. 1, f. 5). Head and body pale yellowish-green, the thorax above fuller green. Antenna ochreous. Fore and middle legs with some dark markings. Abdomen fairly robust for this group; some faint, cloudy subdorsal spots.

Fore wing light yellowish-olive, intersected by creamy-white (in places pale yellow) lines; a moderate black cell-mark; some fuscous irroration darkening the costal end of most of the green bands, the first three bands between M^2 and SM^2 , the proximal subterminal region between the radials and behind M^2 , etc.; the principal white lines subbasal, antemedian and postmedian; subbasal incurved behind cell, very oblique outward to hind margin; antemedian almost interrupted at SC, then slightly wavy, very slightly incurved between cell-fold and SM^2 ; postmedian interrupted behind SC^5 , reappearing slightly more distally at R^1 , slightly wavy, forming two outward lunules between R^3 and M^2 (the posterior very shallow), behind M^2 perpendicular, at hind margin oblique outward; subterminal line extremely fine, rather deeply indented at SC^5 , R^3 and M^2 , running out to termen in front of SM^2 ; the other lines also very slender, much interrupted, chiefly reduced to vein-dots. Hind wing very pale yellowish; a cell-dot, an undulate postmedian line and a distal band, all as in *benquetana* but very much fainter, the two former greyish, the band more olive.

Both wings beneath pale yellow-green (or green-yellow) the fore wing with the markings weak, the hind wing with cell-dot and line slightly stronger than above.

Mt. Murud, 7200 feet (summit) November.

62. *SAURIS NIGRIFRONS* Warr.

Sauris nigrifrons Warr., Nov. Zool., xiv, p. 163, 1907, British New Guinea.

Mt. Poi, 4500 feet—1 ♀.

Not mentioned in literature since the original publication, but I have seen a few examples from the mountains of Borneo and the Malay Peninsula.

63. SAURIS DENIGRATA, Warr.

Remodes ? denigrata Warr., Nov. Zool., iv, p. 66, 1897, Perak.

Mt. Poi, 4350 feet—1 ♀.

The few specimens yet known to me, from Perak, Gunong Ijan and Bidi, Sarawak, are all ♀.

64. SAURIS USTA, Warr.

Holorista usta Warr., Nov. Zool., ii, p. 106, 1895, ♂, (nec ♀), Gunong Ijan, Malay Peninsula.

Mt. Murud, 6000-6500 feet. October--November—3 ♀.

Only definitely known from a few Malayan localities. Warren's "type ♀" was a ♂ of the section or genus *Steirophora* (!), probably *fasciata* Moore, but Tring Museum possesses both sexes from the type locality, not differing except in the sexual characters.

65. SAURIS SEMINIGRA, Warr. subsp. (?).

Holorista seminigra Warr., Nov. Zool., x, p. 383, 1903, British New Guinea.

Mount Poi, 4350 feet—1 ♂.

Rather damaged but apparently very close to a MS Buru race of this species in coll. Joicey.

66. SAURIS CERAMICA Roths.

Sauris ceramica Roths., Nov. Zool., xxii, p. 219, 1915, Central Ceram.

Mt. Poi, 5200 feet—1 ♂.

Described from a single ♀, but the ♂ is awaiting publication in the reports of the Pratt Collections made for J. J. Joicey, Esq. It would be premature to decide whether the Borneo example differs racially.

SUBFAM. GEOMETRINAE.

67. OURAPTERYX INCAUDATA Warr.

Ourapteryx incaudata Warr., Nov. Zool., iv, p. 75, 1897, Kinabalu.

Mt. Poi—1 ♂, 2 ♀; a pair at 3500 feet altitude, the other ♀ at 4700 feet.

The few specimens yet known are all from Borneo.

68. AUZEODES CHALYBEATA, Walk.

Decetia chalybeata Walk., List Lep. Ins., xxxv, p. 1558, 1866, Sumatra.

Mt. Dulit, 3000 feet—1 ♂.

Range. E. Pegu, Malay Peninsula, Borneo, Sumatra.

69. VISITARA BRUNNEIPLAGA Swinh.

Visitara brunneiplaga Swinh., Trans. Ent. Soc. Lond., 1902, p. 621, Sumatra.

Mt. Dulit, 200 feet—1 ♀.

Known from Borneo and Sumatra and perhaps the Philippines.

70. MYRTETA OCERNARIA, Swinh.

Microniodes ocernaria Swinh., Ann. Mag. Nat. Hist. (6), xii, p. 152, 1893, Khasia Hills.

Mt. Murud, 6500 feet. November—2 ♀.

A large form, remarkably like (subsp. ?) *similaria* Swinh. (Ann. Mag. Nat. Hist. (8), xvi, p. 183), except for the absence of the apical patch on fore wing beneath. I believe the species is widely distributed in the Indo-Australian region but the range and nature of variation has not yet been worked out. I have seen *similaria* from Sumatra (loc. typ.), Borneo and Pahang.

71. TASTA SECTINOTA Hmps.

Tasta sectinota Hmps., Faun. Ind. Moths, iii, p. 154, 1895, E. Pegu.

Lio Matu, December—1 ♀.

Apparently an extremely rare though moderately distributed species. I have seen single specimens from Sikkim, Java, and Sumatra; the present is the first known to me from Borneo.

72. LEUCETAERA LUCIFERATA, Walk.

Noreia luciferata Walk., List Lep. Ins., xxiv, p. 1093, 1862, Sarawak.

Mt. Murud, 6000 feet and upwards, November—1 ♂, 2 ♀;
Mt. Dulit, 3000 feet—1 ♀.

Range. Andamans, Malay Peninsula, Sumatra, Borneo.

73. BAPTA JUTA sp. n.

♂ 30--32 mm.

Face and palpus very dark reddish-brown, palpus with 2nd joint slender, appressed-scaled. Vertex, thorax and abdomen white. Fore and mid legs more or less infuscated.

Fore wing broad, termen straightish, not very oblique; SC¹ free, SC² stalked beyond SC³; glistening white irrorated with grey (less densely than in *platyleucata* Walk.); costal edge bright ochreous; cell-dot black, strong; lines grey, shadowy, thick, obsolete costally; antemedian (here median) almost

perpendicular from cell-dot to hind margin; postmedian almost straight from SC^5 to hind margin, parallel with termen; a less irrorated band beyond this extending about halfway to termen; fringe white proximally, brown-grey distally. Hind wing with cell-dot smaller, though well-developed; median line wanting, postmedian continued, curved parallel with termen; outer area and fringe as on fore wing.

Underside white; fore wing with costal edge ochreous, cell-dot faintly showing through.

Mt. Murud, 6000-6500 feet, November—5 ♂, including the type.

Probably nearest to *platyleucata* Walk.

74. PLUTODES CYCLARIA Guen.

Plutodes cyclaria Guen., Spec. Gén. Lép., x, p. 118, pl. 20, f. 3, 1858, Sarawak.

Mt. Dulit, 3000 feet—1 ♀.

A rather variable and fairly common species in the Malayan subregion.

75. PERATOPHYGA VENETIA Swinh.

Peratophyga venetia Swinh., Ann. Mag. Nat. Hist. (7), ix, p. 416, 1902, Perak.

Lio Matu, December—2 ♂.

Inhabits Borneo and the Malay Peninsula, probably representing *hyalinata* Koll. (= *acerata* Moore) of North India.

76. PERATOPHYGA TRIGONATA, Walk.

Acidalia (?) *trigonata* Walk., List Lep. Ins., xxiii, p. 774, 1861, Sarawak.

Mt. Murud, November—1 ♂.

Scarcely known except from Sarawak and Singapore.

77. PERATOPHYGA SPOLODESMA Prout, MS.

Bakong—1 ♀.

A damaged specimen wanting head and abdomen. The species from Bidi, Sarawak, has long been awaiting publication, together with many others in Coll. Joicey.

78. PERATOPHYGA XANTHYALA, Hmps.

Zamarada xanthyla Hmps., Faun. Ind. Moths, iv, p. 553, 1896, Sikkim.

Mt. Poi, 5000 feet—1 ♂.

Hampson placed this species as *Zamarada* evidently on account of its coloration, without looking at the structure; R^1 and R^2 of the fore wing are well stalked and only the σ has the antenna pectinate, i.e., it is an extreme development of the *trigonata* section of *Peratophyga*; in either genus it would be aberrant in the bent termen of hind wing—not mentioned by Hampson.

79. CASSYMA QUADRINATA Guen.

Cassyma quadrinata Guen., Spec. Gén. Lép., x, p. 18, 1858, Borneo.

Mt. Poi, 4350 feet—1 ♀.

Known also from Selangor.

80. CHIASMIA MINUTA Warr.

Chiasmia minuta Warr., Nov. Zool., xii, p. 433, 1905, Borneo.

Mt. Murud, November—1 ♀.

Only known from Tonkin, Sumatra and Borneo.

81. SYNEGIA OCELLATA, Warr. (?)

Syntaracta ocellata Warr., Nov. Zool., i, p. 408, 1894, Gunong Ijau.

Mt. Murud, 6500 feet, November—1 ♀.

Provisionally regarded as a large, very reddish, heavily marked form of this little-known species, but the characteristic "ocellus" of cellule 3 of the hind wing is reduced—encroached upon by the dark clouding.

82. SYNEGIA CAMPTOGRAMMARIA Guen.

Synegia camptogrammaria Guen., Spec. Gén. Lép., ix, p. 420, 1858, Sarawak.

Mt. Murud, 6000--6500 feet, October—1 ♀; November—2 ♀, without indication of altitude.

There may be two or three very closely allied species confused under this name, but as they have about the same geographical distribution—N. India, Malay Peninsula, Borneo, etc.—it is possible that the variations are only individual. The genus has never been systematically dealt with.

83. BORBACHA PARDARIA Guen.

Synegia pardaria Guen., Spec. Gén. Lép., ix, p. 420, 1858, Borneo.

Mt. Murud, 6000--6500 feet—1 ♀.

Range. Ceylon, India, Malay Peninsula, Borneo, Sumatra, Java, Lombok, Sambawa.

84. HYPOCHROSIS LYCORARIA Guen.

Hypochrosis lycoraria Guen., Spec. Gén. Lép., x, p. 538, 1858, Borneo.

Hypochrosis jasminaria Guen., loc. cit., East Indies.

Lio Matu, December—1 ♂; Bakong—1 ♂.

Both the examples belong to the form *jasminaria*. The species is fairly common in the Malay Peninsula, Sumatra and Borneo. Tamis records it from Siam.

85. HYPOCHROSIS CENTRARIA Snell.

Hypochrosis centraria Snell. in Veth, Midden-Sumatra, iv, 1 (2), p. 57, pl. iv, f. 13, 1880, Sumatra.

Hypochrosis mimaria Swinh., Ann. Mag. Nat. Hist. (8), iii, p. 92, 1909, Sumatra.

Mt. Penrissen, 2000 feet—1 ♂.

Hitherto only from Sumatra.

86. HYPOCHROSIS XEROPHYLLA sp. n.

♂ 37 mm.

Face slightly tufted; deep brown, tinged with rufous, narrowly pale above. Palpus $1\frac{3}{4}$; ochreous, mixed with purple-red, above darkened towards end of 2nd joint, the minute decumbent 3rd joint blackish. Vertex and antenna whitish flesh-colour; pectinations about 6. Thorax above whitish-fleshy, beneath mixed with ochreous and purplish; abdomen above rather paler, beneath varied with ochreous and purplish and with some black scales. Legs spotted with purple and blackish, the last four joints of fore tarsus mostly blacker, those of mid tarsus also darkened.

Fore wing slightly narrower than in *mixticolor* Prout (Seitz Macrolep iv, p. 337); SC^1 (out of SC^2) anastomosing with C, SC^{3+4} separating close to apex or perhaps coincident, SC^5 very long stalked, R^2 not much before middle of DC; whitish-buff with a fleshy tinge and with coarse black-grey irroration or minute strigulation; ill-defined browner (somewhat ochreous) shades at base, antemedially (bent in cell), medially (broadest at costa, then enclosing a large black, pale rimmed cell-dot), proximally to the postmedian and at apex of costa; no definite lines except the postmedian which runs obliquely and almost straight (or extremely gently incurved) from towards two-thirds of hind margin to R^2 (about 3 mm. from termen), in front of which it is acutely angled and weakened and runs obliquely inward to costa a little proximal to two-thirds; terminal edge ochreous; fringe deep red-brown. Hind wing rather narrower

than in *mixticolor*; concolorous with fore wing or slightly paler (with less shadings); cell-dot rather less large, postmedian straightish, close beyond it, blacker than on fore wing but obsolete costally, accompanied proximally towards abdominal margin by a narrow shade mixed with ochreous, purplish and blackish; a small black subterminal spot in cellule 3, nearer to postmedian than to termen; termen and fringe as on fore wing.

Underside more tinged with ochreous and (especially on fore wing) much more mottled with dull purple; markings much as above; fore wing also with a small terminal patch of purple close to tornus, hind wing with a narrow apical one reaching (tapering to) radical fold.

Mt. Murud, 6000--6500 feet, November.

Nearest to *mixticolor* Prout, which shows similar anomalies in venation compared with typical *Hypochrosis*; both have also slightly the texture and coloration of *Phalaena*. Possibly they will require a new genus.

87. *LUXIARIA AMASA fulvifascia* Warr.

Luxiaria fulvifascia Warr., Nov. Zool., i, p. 440, 1894, Sumatra.

Pah Trap, November—1 ♂.

It is not certain whether this race (Sumatra, Perak, Borneo) is definitely differentiable from *amasa fasciosa* Moore (Lep. Coll. Atk., p. 254) from N. India, but as the Malayan specimens seem always warmly coloured and are already provided with a name it is clearly better to conserve it than to make any premature alteration. Name-typical *amasa* Butl. (Ann. Mag. Nat. Hist. (5), i., p. 405) is from Japan and China.

88. *LUXIARIA SUBRASATA* Walk.

Acidalia subrasata Walk., List Lep. Ins., xxiii, p. 773, 1861, Sarawak.

Pah Trap, November—1 ♂; Mt. Murud, November—4 ♀.

Name-typical forms occur in the Malay Peninsula and (or almost) in N. India, apparent races in the Moluccas and in New Guinea.

89. *LUXIARIA VERSIFORMIS* Prout.

Luxiaria versiformis Prout, Nov. Zool., xxxii, (ined.), Malay Peninsula.

Mt. Murud, 6000--6500 feet, October—1 ♂; Mt. Penrissen, 3500 feet—1 ♂.

The ♀ will probably be difficult to distinguish from that of *subrasata* and it is possible that some of the ♀ referred there (*supra*) really belong here.

90. LUXIARIA ACUTARIA Snell.

Boarmia acutaria Snell., Tijds. Ent., xx, p. 75, t. vi, 1877, Sumatra.

Mt Poi, 5000 feet—1 ♀.

As noted above, some of the ♀ in this genus are not easy to place, but I believe the present form (which I have also seen from Perak) is referable to Snellen's species.

91. HYPOSIDRA TALACA Walk.

Lagura talaca Walk., List Lep. Ins., xx, p. 59, 1860, Celebes.

Lio Matu, December—1 ♂.

Very widely distributed in the Indo-Australian region.

92. PETELIA IMMACULATA Hmps.

Petelia immaculata Hmps., Ill. Het., ix, p. 140, pl. clxviii, fig. 6, 12, 1893, Ceylon.

Mt. Murud—1 ♂, 2 ♀; Mt. Poi, 5000 feet—1 ♂.

Rangce, Ceylon, Nilgiris, N. India, Burma, Tonkin, Penang, Borneo.

93. FASCELLINA PLAGIATA Walk.

Geometra plagiata Walk., List Lep. Ins., xxxv, p. 1601, 1866, Hindustan.

Mt. Murud, 6000–6500 feet, October—1 ♂.

Commonest in N. India but also known from China, the Malay Peninsula and Sumatra.

94. POLYSCIA VIRIDISPURCA sp. n.

♂ 36 mm.

Face reddish-brown, upper part with olive-grey suffusion. Palpus more ochreous, on outer side somewhat suffused with olive-grey, terminal joint darkened. Thorax concolorous with fore wing; abdomen less yellowish than hind wing, on posterior segments above strongly suffused with pink. Fore and middle legs (as in the other species) longitudinally lined with black. Wings shaped as in *ochrilinea* Warr., or slightly narrower.

Fore wing Naples-yellow with minute, irregularly arranged green strigulae, which are dense in proximal area (especially anteriorly), sparse in median area (especially posteriorly), moderate in terminal area; costal edge brighter yellow, a subcostal streak pale green; markings as in *ochrilinea*, but with the antemedian greener, appreciably less oblique, the postmedian brighter, anteriorly curving into a crimson spot at

SC⁵, which is connected with a smaller apical one; two indistinct roundish grey-spots beyond the postmedian, in middle and posteriorly (probably inconstant); fringe slightly darkened at tip, reddened at the apical spots. Hind wing with termen nearly straight; less strigulate than fore wing (chiefly at base and apex); postmedian line continued as antemedian (from DC² to hind margin just proximally to middle); traces of the outer line of underside, especially at costa.

Underside bright yellow. Fore wing with posterior margin (except at tornus) white, the rest of the wing with strong, dark purple-grey strigulae; postmedian line purple-grey, thickening into a brighter spot between M² and fold. Hind wing with the strigulae sparse, except proximally (especially along costal margin); the line from DC² to hind margin purplish; a redder postmedian half-line between costa and M², a little excurved anteriorly, intent behind R¹ but becoming weak and interrupted; some coarse, partly confluent rosy irroration terminally, culminating in a dense, uninterrupted terminal line.

Mt. Penrissen, 4400 feet.

95. *DALIMA MJOBERGI* sp. n.

♂ 64 mm.

Closely like a large *calamina* Butl. (Ann. Mag. Nat. Hist. (5), vi, p. 121), except in shape of hind wing. Ground-colour rather deeper.

Fore wing with markings stronger than in *calamina*; antemedian scarcely angled in cell; median costal spot vertical, not oblique outward. Hind wing produced to a double tail at SC²--R¹, about 3 mm. long at the former, rudimentary in the latter (about as in the much larger, darker *nubilata* Hmps.); on this tail a large black spot; terminal line in the cellule on either side of it strongly black; cell-dot rather large.

Mt. Murud, 6000--6500 feet, October.

96. *XANDRAMES LATIFERARIA curvistriga* Warr.

Xandrames latistriga Warr., Nov. Zool., i, p. 431, 1894, Khasia Hills.

Mt. Poi, 4500 feet—1 ♂.

It is possible that the Borneo-Sumatra race may prove separable from the Indian. Name-typical *latiferaria* Walk. (List Lep. Ins., xxi, p. 445) was from "North China" (? Shanghai district).

97. OPTHALMODES EXEMPTARIA Walk. (?)

Ophthalmodes exemptaria Walk., List Lep. Ins., xxi, p. 447, 1860, Sarawak.

Mt. Poi, 2000 feet—1 ♀.

According to Swinhoe (Cat. Lep. Het. Oxf. Mus., ii, p. 284) the Borneo *Ophthalmodes* are referable to a single very variable species. The question remains doubtful, pending an analysis of more extensive material. Mr. Joicey has (apart from *clararia* Walk., which seems distinct) six forms from Borneo (four from Bidi, Sarawak) in eight specimens and the present example does not quite agree with any.

98. ECTROPIS IDAEOIDES Moore.

Cleora idaeoides Moore. Lep. Coll. Ath., p. 239, 1888, Darjeeling.

Myrioblephara albipuncta Warr., Proc. Zool. Soc. Lond., 1893, p. 428, Sikkim.

Mt. Murud, October--November—2 ♀.

Probably a race, larger (especially the earlier specimen) than Indian examples.

99. ECTROPIS SIMPLARIA Swinh.

Ectropis simplaria Swinh., Trans. Ent. Soc. Lond., 1894, p. 221, Khasia Hills.

Tutau River, October—1 ♀; Mt. Murud, November—1 ♀.

I believe this species, possibly in distinguishable races will prove to inhabit a considerable part of the Indo-Australian region. A form from Ceram has been described by Rothschild (Nov. Zool., xxii, p. 216, 1915), as *boarmioides*. The differently shaped postmedian lines disproves Hampson's (Faun. Ind. Moths, iii, p. 259) sinking to the preceding.

100. ECTROPIS LONGISCAPIA sp. n.

♂ 40 mm.

Extremely like *bhurmitra* Walk., List Lep. Ins., xxi, p. 381, Ceylon. Antennal ciliation slightly longer. Hind tibia without hair-pencil. Abdomen without basal spine; second tergite rather warmly coloured, third with pair of dark anterior spots rather well-developed.

Fore wing with the stalk of $SC^{1.2}$ arising well down the stalk of $SC^{3.4.5}$ in all three examples (in very rare aberrations of *bhurmitra* connate or just stalked, usually well separate); rather brighter and smoother-looking than *bhurmitra*, the irroration less dense, the markings standing out more

prominently; cell-mark better developed, rather elongate; postmedian rather less incurved behind M^2 , the thick ochreous-brown line distally to it better developed. Hind wing similarly with the markings well expressed; antemedian line rather sharp; cell-mark conspicuous. Underside almost entirely unmarked.

Mt. Poi, 4350--4500 feet—1 ♂, type and another ♂.

Also known to me from Kedah Peak, Malay Peninsula.

101. *ECTROPIS (RUTTELERONA) LITHINA* Warr.

Paraleis lithina Warr., Nov. Zool., x, p. 398, 1903, British New Guinea.

Mt. Poi, 4350 feet—1 ♂.

As the Borneo subspecies is at present "in the press" and will appear shortly in the "Novitates Zoologicae" I will not complicate the bibliographer's work by referring to it by name here.

102. *ECTROPIS TRISTIS* Butl.

Abaciscus tristis Butl., Ill. Het., vii, p. 102, pl. cxxxv, f. 18, 1889, N.W. India.

Mt. Poi, 4350 feet—1 ♂.

An aberration with the white markings reduced. The forms from N.W. India and Assam (whence alone I have hitherto known it) show this to be a variable species.

103. *ECTROPIS PICTA* Warr.

Myrioblephara picta Warr., Nov. Zool., iii, p. 404, 1896, Java.

Mt. Poi, 4350--4500 feet—2 ♀.

Both appear more heavily marked—especially in respect of the distal area of hind wing above and beneath—than Warren's Javan type. Perhaps racial.

104. *CLEORA DETERMINATA* Walk.

Boarmia determinata Walk., List Lep. Ins., xxi, p. 384, 1860, Sarawak.

Mt. Poi, 4300--5000 feet—5 ♂.

Inhabits the Malay Peninsula, Sunatra, and Borneo. I formerly considered Walker's suggestion that this might be a subspecies of the Indian *alienaria* Walk. to be well founded, but as I have recently discovered that there are other claimants in Malaya, which I have not yet fully worked out, I continue to quote *determinata* as a species.

105. *CLEORA MJÖBERGI* sp. n.

♂ 40--48 mm.

Nearly related to the preceding. Palpus with third joint more heavily clavate. Antennal pectinations more lax, in all the examples more or less curling about the shaft. Hind tibial hair-pencil mixed with bright ochreous (in *determinata* grey and blackish).

Fore wing with termen appreciably less oblique; antemedian line more acutely angled in cell; median area rarely conspicuously paler than the rest; the sinuous median line generally well-developed; postmedian much more gently and regularly excurved anteriorly than in *determinata*, intermediate towards that of *inflexaria* Snell. Hind wing less rounded apically, this appearing rather more elongate; proximal whitish area nearly always sharply contrasted with the median area, the dividing line (median) nearly always more proximally placed and better developed than in *determinata*; terminal area less mottled with white.

Fore wing beneath with cell-spot much less large than in *determinata*; both wings with the dark subterminal band much less broad, less black, the paler parts (except apex of fore wing) less white, more suffused, than in that species.

An aberration (2 ♂) has the median shade thickened, looking much less sinuous on the fore wing. Apart from this form, the species is also moderately variable in depth of colouring, etc.

♀ 46 mm. Similarly marked to the described ♂--ab., but whiter.

Mt. Murud, 6000--6500 feet. November—22 ♂, 1 ♀, including type ♂ and allotype ♀.

106. *CLEORA INFLEXARIA* Snell.

Boarmia inflexaria Snell., Tijds. Ent., xxiv, p. 72, pl. 8, f. 2, 1881, Celebes.

Mt. Poi, 200 feet—1 ♂.

Widely distributed through the Indo-Australian region.

107. *CLEORA PROPULSARIA* Walk.

Boarmia propulsaria Walk., List Lep. Ins., xxi, p. 385, 1860, Sarawak.

Mt. Penrissen, 2000 feet—1 ♂; Mt. Poi, 5000 feet—1 ♂; Mt. Dulit, 3000 feet—1 ♂.

A common and widely distributed Indo-Malayan species. The Mt. Dulit example is large and well-marked.

108. *CLEORA PERIPHRACTA* sp. n.

♂ 39 mm.

Very like a large *colorifera* Prout (Nov. Zool., xxiii., p. 53), of which, in spite of the apparent structural differences (mostly unverifiable without dissection) it is hard to believe it may not be a remarkable form. Rather larger. Face predominantly white. Palpus with third joint perhaps rather longer (more fully exposed) more drooping. Hind tibia perhaps more heavily dilated, the black hair-pencil very strong. Both wings darker, less ochreous, above and beneath. Fore wing with secondary fovea (present in both species in front of submedian fold) broader; stronger dark interneural marks from postmedian to subterminal; dark clouding (apparently variable) between M (—M²) and SM². Hind wing with termen rather more strongly crenulate than in *colorifera*; costal margin rather more arched proximally.

Mt. Penrissen, 3500 feet.

There are also less dark examples in Coll. Tring Mus. from Kinabalu (1 ♂, 1 ♀) and Gunong Ijau (1 ♀). Differs from *variegata* Moore in the considerably longer pectinations, more elongate hind wing, less bright and varied coloration, deeply lunulate-dentate subterminal of hind wing between R³ and tornus, heavy dark borders beneath, etc. In all the *colorifera* and *periphRACTA* yet known to me SC¹ and SC² arise from the cell well apart, while in *variegata* they are nearly always stalked, though usually very shortly.

109. *CLEORA PRAEVARIEGATA* sp. n.

♂ 34 mm.

Group of *variegata* Moore. Palpus with terminal joint rather longer, more drooping. Antennal pectinations much longer, the longest fully 1.5 mm.

Fore wing with SC¹ shortly stalked, sometimes anastomosing with C; fovea scarcely so large as in *variegata*; wing even more variegated, the ground-colour nearly white, strongly suffused with ochre yellow about both folds, the pale subterminal spot in the type more orange, the blackish cloudings and median shade stronger; some blackish hind marginal shading between antemedian and median; median curved outside cell-spot, not angled; postmedian less excurved between SC⁵ and R²; subterminal barely indented at fold, expanding into a marked spot at tornus; terminal pale mark

in cellule 3 and on fringe more developed. Hind wing with costal margin less expanded costally than in *variegata*; costal area above less white; cell-spot larger; terminal violet-grey shade strong, obliterating the anterior half of subterminal line.

Underside more heavily marked than in *variegata*.

♀ 38 mm.

Darker than the ♂, the median area of the fore wing almost entirely dark, the borders of hind wing and underside broad and heavy.

Mt. Murud, November (type ♂); 6000--6500 feet (allotype ♀). Mt. Poi, 5200 feet—2 ♂, rather larger and still more heavily marked with the median shade slightly more bent. Mt. Penrissen, 4400 feet—1 ♂, slightly intermediate, nearer to the type.

110. *CLEORA AEGLOPHANES* sp. n.

♂ 40 mm.

Very close to the preceding, of which it may prove a form. Larger and brighter, the body and wings with more of the orange admixture.

Fore wing with apex and termen slightly more rounded; the ochreous suffusion at the folds brighter; distal dark borders more relieved with orange at apex and (in proximal part) at both ends; median and postmedian lines slightly more incurved posteriorly. Hind wing slightly ampler than in *praevariegata*; proximal dark markings not nearly reaching costa; cell-mark narrower; terminal band, except anteriorly, much mixed with orange.

Underside nearly as in *praevariegata*, the hind wing more weakly marked anteriorly and with rather smaller cell-spot.

Mt. Murud, 6000--6500 feet, October; from Kinabalu, a ♂ in Coll. Tring Museum.

111. *CLEORA DERIVATA* sp. n.

♂ 35 mm.

Head light brown, mixed on face and palpus with dusky brown. Palpus $1\frac{1}{2}$, second joint with the spreading scales rather less dense than in most of the allies, terminal joint over one-half second joint, exposed, slightly swollen in middle. Antenna pectinate to about three-fifths, the branches rather slender, the longest nearly 5. Thorax and abdomen above

pale brown, somewhat variegated, the patagia and tegulae predominantly deeper brown and blackish; beneath paler. Hind tibia moderately dilated with hair-pencil; abdominal spine slender.

Fore wing with SC^1 quite shortly stalked with SC^2 , anastomosing moderately with C; fovea not quite so large as in *variegata* Moore, partly scaled above; ground-colour whitish-brown, scarcely showing except in a narrow band proximal to the postmedian line and in the apex, otherwise suffused with Mikado-brown (Ridgway, pl. xxix); markings much as in *versicolor* Prout (Sar. Mus. Journ., ii, p. 181). Hind wing with a tinge of ochre, but much less pronounced than in *versicolor*; postmedian line straighter; a rather ill-defined terminal (in places subterminal) band of grey shading, about 2.5 mm. in width. Underside less ochreous than in *versicolor*, the markings of upperside showing in grey; both wings dark-bordered, the fore wing with clear apical and midterminal spots.

Mt. Murud, 6000-6500 feet, October.

The type of *versicolor* is a ♀ from Mt. Kinabalu. It is just possible, though extremely unlikely, that this much smaller insect is its ♂.

112. BOARMIA COSTARIA Guen.

Boarmia costaria Guen., Spec. Gén. Lép., ix, p. 242, 1858, Sarawak

Lio Matu—1 ♂; Mt. Dulit, 3000 feet—1 ♂.

Range. Borneo, Sumatra, Java.

113. BOARMIA LIOPTILARIA Swinh.

Boarmia lioptilaria Swinh., Fascia. Malay Zool., i, p. 91, 1903, Selangor.

Mt. Murud, November—1 ♂; Mt. Dulit, 3000 feet—1 ♂.

Local in the Malay Peninsula and Sumatra. A race (?) in Assam.

114. BOARMIA SUBDETRACTARIA Prout.

Boarmia detractaria Walk., List Lep. Ins., xxi, p. 385, 1860 (nom. praeocc.), Sarawak.

Boarmia subdetractaria Prout, Nov. Zool., xxx, p. 211, 1923 (Nom. nov.).

Lio Matu, December—1 ♂; Mt. Dulit, 3000 feet—3 ♂.

A rather common Sarawak species, otherwise known to me from the Malay Peninsula and Sumatra.

115. BOARMIA FIMBRIATA Moore.

Cleora fimbriata Moore, Proc. Zool. Soc. Lond., 1867, p. 628, Bengal.

Mt. Murud, November—1 ♂.

Rather brightly coloured above, recalling *squamosa* Warr. (Nov. Zool. iii, p. 131) beneath. *B. fimbriata* as at present understood seems very variable and it is undesirable to erect a subspecies on a single example.

116. BOARMIA MESOTOECHIA sp. n.

♀ 35 mm.

Face with moderately appressed scales; blackish-brown, narrowly pale beneath. Palpus rather short and stout, with minute blunt terminal joint; blackish-brown, paler at tip. Vertex black-brown; occiput pale buff. Body pale buff; wing-tegulae with a dark central spot; abdomen above with weak dark belts which are slightly interrupted by a pale mediodorsal line.

Wings with about the shape of *fimbriata* Moore. Fore wing with $SC^{1,2}$ long-stalked, anastomosing at a point with C, SC^2 connected with $SC^{3,4}$; pale buff, somewhat clouded (especially at the postmedian line) with cinnamon-buff; some dark irroration; dark costal spots at 4, 8 and 11 mm., giving birth to the lines; antemedian marked by a dot on M and a short streak on SM^2 ; median slightly excurved just outside the cell-dot, thickened a little at hind margin; postmedian punctiform, with a spot at SM^2 (reaching hind margin), rather abruptly bent outward to the dot on R^1 , thence rather more oblique inward than termen, the posterior spot, however, rather more distal than the dot on M^2 ; terminal area dark-clouded near apex and tornally; subterminal fairly distinct on the dark shades, slight between, dentate anteriorly, scarcely posteriorly; longitudinal black terminal marks in cellules 4, 5 and 6; terminal line interrupted at the veins; fringe weakly mottled. Hind wing pale at extreme base, thence heavily irrorated to near middle, where a blackish median band nearly touches the feeble postmedian dots; a rather broad cinnamon-buff band beyond, nearly (in middle quite) reaching the subterminal; distal area nearly as on fore wing.

Underside cream-buff; proximal area with strong dark irroration and suffusion; median shade of fore wing almost as broad as on hind wing; straightish, crossing the cell-dot,

posteriorly furcate, its distal branch joining the hinder spot of the postmedian; postmedian as above; terminal bands darker and more solid, especially on fore wing, where only apex and faint traces of subterminal line and of terminal markings between R^3 and M^2 remain pale.

Mt. Murud, November.

In spite of date of capture and similarity of structure, it seems impossible that this can be a ♀ form of the preceding.

117. *BOARMIA CHLOANA* sp. n.

♂, ♀ 33--36 mm.

Face nearly smooth, without cone below. Palpus rather short, heavily scaled above and beneath; terminal joint small and blunt, mostly concealed. Antennal pectinations moderate (the longest about 4), distal one-fifth merely ciliated. Head and thorax tawny-olive, no doubt greener when fresh emerged; abdomen rather greyer, with a slight, pale basal crest; body beneath whitish. Abdomen of ♂ with strong lateral and anal tufts, much as in *Polylophodes triangularia* Warr. (Nov. Zool., iii, p. 406). Fore and middle legs darkened above, with pale spots at ends of joints.

Fore wing rather elongate, termen smooth, curved, strongly oblique; $SC^{1,2}$ coincident, free; fovea present; light yellowish-olive, with small black costal spots at origin of lines; an incomplete (costal) band close to base; a moderately broad vinaceous-cinnamon, black-irrorated band on either side of median area, the proximal slightly broader and stronger; lines blackish; antemedian from costa at about 5 mm., rather variably excurved in cell, angled inward at fold; cell-mark more or less elongate, narrow; median just beyond it, angled outward in cellule 5, weak posteriorly; postmedian just proximal to two-thirds, angled outward in cellule 5, oblique inward to M^1 , here and on M^2 with black spots, weaker posteriorly, gently incurved at fold; subterminal white, dentate, with deeper proximal tooth on R^3 , posteriorly running to tornus; a vinaceous-cinnamon, black-mixed terminal spot at the radials; terminal black dots sharp, triangular; fringe pale, distally almost white, proximally with dark spots opposite the veins. Hind wing with apex round-prominent, termen wavy and sinuous, straightish or almost convex anteriorly, weakly convex posteriorly; proximal half whitish, with grey median and postmedian lines, the former thickened at abdominal margin,

the latter slightly sinuous; cell-mark touching the postmedian. a broad violet-grey band between postmedian and subterminal; abdominal margin, tornus and termen concolorous with fore wing; an elongate black tornal spot bounding the subterminal line proximally; terminal spots flatter, connected by a dark thread.

Both wings beneath much as fore wing above, the grey shades more smoky, almost or quite reaching termen; fore wing also suffused in and just beyond cell, the costal margin remaining tawny-olive, the hind margin white; fringes more weakly spotted than above.

Mt. Murud, 6000-6500 feet. November—4 ♂, 2 ♀.

Probably near *triangularia* Warr., the ♂ much less eccentric in shape and with the specialized scaling beneath hind wing. These species, together with *Ectropis picta* Warr., *Necyopa flatipennata* Walk. and a few others may well form a separate biological group with very unstable ♂ characters, perhaps near *Diplurodes*.

118. HEMEROPHILA DELINEATA Walk.

Boarmia delineata Walk., List Lep. Ins., xxi, p. 387, ♀, 1860, Sarawak.

Mt. Poi, 4400-5000 feet—3 ♂.

If this is, as I assume, the long-awaited ♂ to *delineata* Walk. (vera), authors have scarcely been justified in sinking to this the Indian *canidorsata* Walk., notwithstanding that the ♀ ♀ do not seem definitely distinguishable. The present ♂♂ are rather stumper winged and have the sexual hair-tufting in the abdominal region of the hind wing beneath much stronger, posteriorly mostly black.

119. PROCHASMA DENTILINEA Warr.

Psilalcis dentilinea Warr., Proc. Zool. Soc. Lond., 1893, p. 431, Sikkim.

Mt. Murud, 6000-6500 feet, October--November—2 ♂ one of the latter a darker aberration.

Sikkim, Burma, Malay Peninsula and Borneo are the hitherto known localities of this species. The metallic metathoracic crest on which Warren founded the genus *Prochasma* is as well-developed in this species as in the genotype.

120. *PROCHASMA SCISSIVESTIS* sp. n.

♂ 21 mm. ; ♀ 24 mm.

Head white, with a few black dots. Palpus short and stout; blackish with pale tip. Antennal pectinations much shorter than in the typical species. Thorax above black; metathoracic crest lower than in the other species, the admixture of metallic scaling perhaps less strong. Abdomen white, with black irroration and clouding (lost in type).

Fore wing with the coincident vein (SC^{1+2}) well free; fovea large; white, finely irrorated with black; some blue-grey scaling between postmedian and subterminal lines, except at hind margin; a highly irregular vandyke-brown cloud occupying basal area and cell and forming a posteriorly attenuated band just proximally to the postmedian; cell-mark small, black, inconspicuous; lines marked by costal spots, otherwise obsolescent; antemedian fairly direct, bounding the basal area; postmedian gently incurved between R^3 and M^2 , extremely oblique inward from M^2 to fold, then slightly oblique outward; subterminal dentate, almost obsolete in posterior half, in anterior edged proximally and distally with black shading. Hind wing with termen scarcely at all crenulate, very slightly sinuate inward between SC^2 and R^3 ; white with fine black irroration (weakest costally); abdominal edge tinged with brown; cell-spot and postmedian line distinct, the latter little bent, punctuated on the veins; subterminal indicated by some proximal shading.

Fore wing beneath more suffused anteriorly, the vandyke shades replaced by black-grey; hind wing nearly as above.

Mt. Murud, 6000--6500 feet, October—1 ♂, 1 ♀.

121. *DIPLURODES FIMBRIPEDATA* Warr.

Ectropidia fimbripedata Warr., Nov. Zool., vii, p. 113, 1900, Perak.

Lio Matu, December—1 ♂.

Apparently not previously recorded outside the Malay Peninsula.

122. *MEDASINA VINACEA* sp. n.

♂ 58--62 mm.

Head and body concolorous with wings; pectus browner. Face brown, narrowly white below and very narrowly above. Vertex mixed with brown. Palpus about $1\frac{1}{2}$, blackish-mixed on outer side. Antennal pectinations long (perhaps 10). Hind tibial hair-pencil light brown.

Fore wing shaped as in *albidaria* Walk., or slightly broader; white, suffused almost throughout with pale or light vinaceous-drab and irrorated with brown; markings much as in *albidaria*, the lines arising from black costal spots, indistinct, but accompanied by brown shading and marked with black dots or minute teeth on the veins; median rather less strongly ex-curved, passing round the obscure greyish cell-mark, sometimes almost crossing it, posteriorly nearer to postmedian than to antemedian, with a sharp proximal tooth at SM^2 ; dark mark behind R^3 outside the postmedian, sometimes developed into a roundish black-grey spot; subterminal shade not or scarcely darkened at costa. Hind wing with cell rather shorter than in *albidaria*; concolorous with fore wing, rather white at base; markings much as in *albidaria* but with the median line or shade close to cell-dot, the postmedian a little more regular than in that species.

Fore wing beneath with a broad (at R^2 9 mm.) black-brown terminal band, reaching termen at SC^5 -- R^2 and again at tornus, enclosing apically and behind R^2 large white terminal spots; cell-spot large; a median shade just proximal to it. Hind wing similar, the terminal white marking more band-like, only interrupted at radial fold.

♀ similar, the white ground-colour less obscured.

Mt. Poi, 4400 feet (♂ type), 4500 feet (♀ allotype), 3500 feet—1 ♂; Mt. Murud, 6000--6500 feet, October—1 ♂.

123. *DILOPHODES ELEGANS auribasis* subsp. n.

♀ 53 mm.

Distinguishable at a glance from the other races in having the base of the fore wing orange, concolorous with the thorax, the abdomen above white. The maculation of the wings, which will doubtless prove as variable as in the allies, shows a tendency toward longitudinal extensions and coalescences; in particular the last row of spots before the terminal on the fore wing shows a very strong development, is anteriorly almost entirely confluent with the preceding series (forming a nearly solid apical patch from costa to R^3) and the spot on M^1 , being much enlarged, encroaches much more on the midterminal projection of the ground-colour than in the other races.

Mt. Murud, 6000--6500 feet, October, the type only.

I have seen a damaged example from the Malay Peninsula. In the present specimen the long stalk of $SC^{1'2}$ anastomoses at a point with C, but the venation of the species is notoriously inconstant; see Hampson (Faun. Ind. Moths, iii, p. 305).

124. STALAGMIA GUTTARIA Guèr.

Phalaena guttaria Guèr., Icon. Règne. Anim., ii, pl. 90, fig. 2, 1836 (?).

Foot of Mt. Dulit—1 ♀.

Range. Singapore, Java, Sumatra, Borneo.

Explanation of Plate 7.

GEOMETRIDAE.

- Fig. 30. *Eupithecia dinosia*.
 „ 31. *Chloroclystis obturgescens*.
 „ 32. *Eupithecia delozona*.
 „ 33. *Goniopteroloba biconjuncta*
 „ 34. *Eois mixosemia*
 „ 35. *Derambila propages*
 „ 36. *Anisodes pyrrhocrica*
 „ 37. *Scopula oedocnemis*.
 „ 38. *Scopula leucopis*
 „ 39. *Horisme murudensis*.
 „ 40. *Collix blosyra*.
 „ 41. *Rhinoprora eurymesa*
 „ 46. *Asura crustata*.
 „ 49. *Dalima mjöbergi*

All are types of ♂ named by L. B. Prout, except fig. 32 which is a ♀, and fig. 46 which is a ♂ Arctiid described by G. Talbot.



30



31



32



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